

CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (original) An apparatus adapted for microbial intervention and pasteurization of food

having an outer surface, comprising:

a chamber having a bottom surface, and a suspension element adapted to support

the food above the bottom surface;

a superheater for circulation heating to temperatures from about 65° C to about

232° C, having inlet and outlet connections and thermostat control;

a steam generator having a steam outlet pipe, and a water inlet valve, the steam

outlet pipe being in fluid communication with the inlet of the superheater;

a controller operably connected to the water inlet valve, the steam generator and

the superheater;

a timer operably connected to the controller and superheater;

a power source connected to the steam generator, the controller, the timer, and the

superheater; and

a temperature sensor adapted to sense the temperature of the food or chamber

where the food is exposed, the sensor being connected to the controller.

Claim 2. (original). The apparatus of Claim 1, wherein the chamber includes a drain.

Claim 3. (original). The apparatus of Claim 1, further including a chilled water source for

bathing the produce.

Claim 4. (original). The apparatus of Claim 1, wherein the steam generator includes a backflush

pipe having a safety valve.

Claim 5. (original). The apparatus of Claim 1, wherein the suspension element is a shelf.

Claim 6. (original). The apparatus of Claim 5, wherein the shelf is a porous shelf.

Claim 7. (original). The apparatus of Claim 1, wherein the suspension element is a conveyor.

Claim 8. (original). The apparatus of Claim 7, wherein the conveyor is a porous conveyor.

Claim 9. (original). The apparatus of Claim 1, wherein the controller and the timer form an
integral unit.

Claim 10. (original). The apparatus of Claim 1, wherein the temperature sensor is a
thermocouple.

Claim 11. (original). The apparatus of Claim 10, wherein the thermocouple is inserted into the
steam pipe.

Claim 12. (original). The apparatus of Claim 10, wherein the connection between the
thermocouple and the controller is wireless.

Claim 13. (original). The apparatus of Claim 1, wherein the temperature sensor is a remote
electronic measuring device.

Claim 14. (original). The apparatus of Claim 1, wherein the chilled water source is located
inside the chamber.

Claim 15. (original). The apparatus of Claim 1, wherein the chilled water source is located
outside the chamber.

Claim 16. (original). The apparatus of Claim 1, wherein the steam generator includes a first set
of plates and a second set of plates electrically connected to the power source.

Claim 17. (original). The apparatus of Claim 16, wherein the steam generator further includes an
immersion heating element producing steam under pressure from about 30 pounds
per square inch to about 100 pounds per square inch.

Claim 18. (original). The apparatus of Claim 1, where the superheater includes a flanged immersion heater, vessel, insulation, terminal enclosures, inlet and outlet water sources and connections, and an integral thermostat.

Claim 19. (original). The apparatus of Claim 1, wherein the water inlet valve is connected to an orifice.

Claim 20. (withdrawn). A method for microbial intervention and pasteurization of food having an outer surface comprising the steps of:

- placing the food in a chamber;
- adding superheated steam to the chamber;
- sensing a temperature of the food outer surface;
- adding steam to the chamber if the measured temperature of the food outer surface is less than a preselected temperature, otherwise;
- starting a timer having a timeout period;
- adding steam to the chamber until the timeout period occurs; and
- stopping the addition of steam to the chamber.

Claim 21. (withdrawn). The method of claim 20, further including the step of bathing the outer surface of the food with chilled water.

Claim 22. (withdrawn). The method of Claim 20, wherein the step of sensing a temperature of the food outer surface is accomplished using a thermocouple placed in proximity to the food outer surface.

Claim 23. (withdrawn). The method of Claim 20, wherein the step of sensing a temperature of the steam within the steam outlet pipe is accomplished using a thermocouple placed within the steam outlet pipe.

Claim 24. (withdrawn). A method for microbial intervention and pasteurization of food having an outer surface comprising the steps of:

- placing the food in a chamber;
- adding super heated steam of about 65° C to about 232° C to the chamber;
- sensing a temperature of the steam inside the steam outlet pipe;
- until the temperature of the steam within the steam outlet pipe is greater than a first preselected temperature;
- starting a timer having a timeout period; and
- adding superheated steam to the chamber until the timeout period occurs, or the measured temperature of the food becomes greater than a second preselected temperature, whichever occurs first.

Claim 25. (withdrawn). The method of Claim 24, further including the step of bathing the outer surface of the food with chilled water after the timer reaches the timeout period.

Claim 26. (withdrawn). The method of Claim 24, wherein the step of sensing a temperature of the food about 1/4 inch below the food outer surface is substituted for the step of sensing a temperature of the steam within the steam outlet pipe, and wherein the step of adding superheated steam to the chamber until the measured temperature of the food about 1/4 inch below the outer surface is greater than a first preselected temperature is substituted for the step of adding superheated steam to the chamber until the temperature of the steam within the steam outlet pipe is greater than a first preselected temperature.

Claim 27. (withdrawn). The method of Claim 24, wherein the step of sensing a temperature of the food outer surface is accomplished using a thermocouple placed in proximity to the steam in the steam outlet pipe.

Claim 28. (withdrawn). The method of Claim 24, wherein the step of sensing a temperature of the steam in the steam outlet pipe is accomplished using a remote electronic sensing device.

Claim 29. (withdrawn). An apparatus for microbial intervention and pasteurization of equipment having an outer surface, comprising:

- a chamber having a bottom surface, and a suspension element for supporting the equipment above the bottom surface;

- a superheater for circulation heating to temperatures from about 65° C to about 232° C, having inlet and outlet connections and thermostat control;

- a steam generator having a steam outlet pipe and a water inlet valve, the steam outlet pipe being in fluid communication with the inlet of the superheater;

- a controller operably connected to the water inlet valve, the steam generator, and the superheater;

- a timer operably connected to the controller and superheater;

- a power source connected to the steam generator, the controller, the timer, and the superheater; and

- a temperature sensor adapted to sense the temperature of the equipment outer surface, the sensor being connected to the controller.

Claim 30. (withdrawn). The apparatus of claim 29, further including a chilled water source.

Claim 31. (withdrawn). A method for microbial intervention and pasteurization of equipment having an outer surface comprising the steps of:

- placing the equipment in a chamber;

- adding super heated steam of about 65° C to about 232° C to the chamber;

- sensing a temperature of the equipment outer surface;

adding superheated steam to the chamber until the temperature of the equipment outer surface is greater than a first preselected temperature;

starting a timer having a timeout period; and

adding superheated steam to the chamber until the timeout period occurs, or the measured temperature of the equipment outer surface becomes greater than a second preselected temperature, whichever occurs first.

Claim 32. (withdrawn). The method of claim 31, further including the step of bathing the outer surface of the equipment with chilled water after the timer reaches the timeout period.